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FORECASTING TRANSFORMATIONAL LEADERSHIP
AMONG NAVAL ACADEMY GRADUATES

FINAL REPORT

ONR-TR-9

Francis J. Yammarino & Bernard M. Bass

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FORECASTING TRANSFORMATIONAL LEADERSHIP AMONG NAVAL ACADEMY GRADUATES

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Abstract

This is the final report of the project "Forecasting Transformational Leadership Among Naval Academy Graduates," Contract N0001487K0434 between the State University of New York at Binghamton and the Office of Naval Research. The purpose of this research was to propose, provide measures of, and test a general model of transformational leadership and its relationship to various precursors and consequences in a sample of United States Navy Officers. During the two-year contract eight technical reports were completed and distributed. These are summarized and fully cited along with the archival publications and presentations resulting from the project. A list of personnel involved in the project and directions for future research also are provided.

FORECASTING TRANSFORMATIONAL LEADERSHIP AMONG NAVAL ACADEMY GRADUATES

The purpose of this research was to propose, provide measures of, and test a general model of transformational leadership and its relationship to various precursors and consequences in a sample of United States Navy (USN) officers. The 186 officers were graduates of the United States Naval Academy (USNA) and were on active duty assigned to the surface warfare fleet. Data about the officers were collected from the officers, USNA records, 793 senior subordinates of the officers, and USN records that contained superiors' evaluations of the officers. In addition, for the purposes of pre-testing survey instruments, analyses of data collected from 318 senior officers attending the Naval War College were completed. For comparison purposes and further testing, data also were analyzed for 107 midshipmen squad leaders and their 1235 plebe subordinates at the USNA. This effort, over a two-year period, resulted in eight technical reports. The following are summaries of the eight reports.

DISPOSITIONAL AND SITUATIONAL LEADERSHIP

(TECHNICAL REPORT NO. ONR-TR-1)

For over four decades, leadership research has examined the issue of whether internal dispositions (traits), situational characteristics (contexts), or some combination of these, influence the behavior of leaders. After providing an integrative review of this literature, a clarification is presented by explicitly considering multiple levels of analysis in the conceptualization and testing of these views of leadership. Implications for future leadership research and managerial practice are discussed.

LONG-TERM FORECASTING OF TRANSFORMATIONAL LEADERSHIP

(TECHNICAL REPORT NO. ONR-TR-2)

The results of this study of a representative sample of 186 fleet officers indicated that their (1) high school rank and verbal and math aptitude were predictors of academic and military success at the USNA; (2) military performance at the USNA was a predictor of subordinate-rated charismatic and inspirational leadership as an officer in the fleet and effectiveness according to subordinates' ratings of satisfaction and effectiveness and superiors' performance evaluations (fitness reports); and, as hypothesized, (3) transformational as compared to transactional leadership as rated by subordinates was more strongly related to subordinates' evaluations of the effectiveness and satisfaction with the focal officers and superiors' ratings of the focal officers' performance. Given these preliminary findings, several directions for future research are discussed.

AUGMENTING EFFECT OF CHARISMATIC LEADERSHIP

(TECHNICAL REPORT NO. ONR-TR-3)

Contingent reward behavior and charismatic leadership were examined in this study of the 186 officers. As expected, contingent reward behavior was significantly related to multiple measures of leader effectiveness. Hierarchical regression was used to show how charisma added unique variance beyond that of contingent reward behavior for understanding leader effectiveness. Conversely, contingent reward behavior had no effect beyond that of charisma. Results were discussed in terms of the potential need for charismatic leadership at various organizational levels in order to ensure maximum effectiveness.

MULTIPLE LEVELS OF ANALYSIS AND TRANSFORMATIONAL LEADERSHIP

(TECHNICAL REPORT NO. ONR-TR-4)

Transformational leadership was clarified conceptually in this study by focusing on leader-follower interactions in terms of multiple levels of analysis--individuals, dyads within groups, and groups. Results from Within and Between Analysis (WABA) for the 186 officers suggest that, while a few relationships were based on between groups (leaders) differences, the network of relationships was based primarily on individual differences in subordinates' perceptions of leadership and outcomes. Transformational leadership as compared to transactional or laissez-faire leadership was related more strongly to subordinates' extra effort and satisfaction with the focal officers and the officers' effectiveness.

SELF AND OTHERS' RATINGS OF LEADERSHIP

(TECHNICAL REPORT NO. ONR-TR-5)

Self-rated leadership behavior (transformational, transactional, laissez-faire) was obtained for 155 officers in parallel to the leadership descriptions for the same dimensions provided by the officers' senior subordinates. In addition, fitness reports completed by the officers' superiors provided performance and promotion data which were indexed as appraisals of the officers' success. The self-ratings tended to be inflated in comparison to subordinates' ratings, but the more effective officers were less likely to inflate their self-described leadership behavior. A possible explanation for this effect is that subordinates' descriptions of leadership were significantly related to superiors' ratings of performance and promotion, but self-ratings of leadership were not associated with these measures.

TRANSFORMATIONAL LEADERSHIP OF MIDSHIPMEN

(TECHNICAL REPORT NO. ONR-TR-6)

The purpose of this study was to assess the relationships among transformational leadership and leader success for 107 midshipmen leaders. Results indicate that (1) transformational leadership and outcomes (extra effort by subordinates, satisfaction with and effectiveness of the focal leaders) as rated by plebes (subordinates) were highly related; (2) transformational leadership and outcomes as rated by company officers (superiors) were strongly associated; (3) high school class rank and verbal and math aptitude were predictive of academic and military success at USNA; (4) academic and military success were associated with USNA performance (e.g., performance grade, conduct, lack of demerits); (5) participation in varsity sports was related to being seen as a transformational leader; (6) superiors' ratings of outcomes were associated with subordinates' ratings of transformational but not transactional leadership; and (7) superiors' rating of transformational leadership were related to USNA academic and military performance and performance grades of the midshipmen, while superiors' ratings of transactional leadership were associated with selection into the midshipmen leadership structure.

PERSONAL ATTRIBUTES AS PREDICTORS OF LEADERSHIP

(TECHNICAL REPORT NO. ONR-TR-7)

A set of variables assessing personal attributes (e.g., personality, thinking style, psychological type [MBTI], interests, and life experiences) were investigated as predictors of transformational and transactional leadership for the 107 midshipmen leaders. Results from correlational and regression analyses indicated that (1) different categories of personal

attributes were generally independent of one another; (2) various individual interests, thinking styles, personality traits, and experiences were predictive of transformational and transactional leadership as rated by subordinates and superiors; and (3) when combined, thinking style (two measures), personality traits (three measures), psychological type (two measures), and experience (one measure) were predictive of transformational and transactional leadership of focal midshipmen as rated by their superiors and subordinates (Multiple Rs = .447 to .572 for four equations).

TRANSFORMATIONAL LEADERSHIP AND PERFORMANCE

(TECHNICAL REPORT NO. ONR-TR-8)

A model of leadership and performance was proposed and tested for the 186 officers. Using a LISREL measurement model and structural equations, results provided support for the proposed conceptual model. That is, performance while at the USNA was predictive of leadership as an officer in the surface fleet four to ten years after graduation, which in turn was associated with fitness reports and performance as an officer serving in the surface fleet. Transformational leadership (positive) and laissez-faire leadership (negative) were better predicted by past performance and were more strongly associated with current performance than was transactional leadership.

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Bibliography

Technical Reports

- Bass, B.M., & Yammarino, F.J. (1988). Leadership: Dispositional and situational. Technical Report No. ONR-TR-1, Office of Naval Research.
- Yammarino, F.J., & Bass, B.M. (1988). Long term forecasting of transformational leadership and its effects among Naval Officers: Some preliminary findings. Technical Report No. ONR-TR-2, Office of Naval Research.
- Waldman, D.A., Bass, B.M., & Yammarino, F.J. (1988). Adding to leader-follower transactions: The augmenting effect of charismatic leadership. Technical Report No. ONR-TR-3, Office of Naval Research.
- Yammarino, F.J., & Bass, B.M. (1989). Multiple levels of analysis investigation of transformational leadership. Technical Report No. ONR-TR-4, Office of Naval Research.
- Bass, B.M., & Yammarino, F.J. (1989). Transformational leaders know themselves better. Technical Report No. ONR-TR-5, Office of Naval Research.
- Atwater, L.E., & Yammarino, F.J. (1989). Transformational leadership among midshipmen leaders at the United States Naval Academy. Technical Report No. ONR-TR-6, Office of Naval Research.
- Atwater, L.E., & Yammarino, F.J. (1989). Personal attributes as predictors of military leadership: A study of midshipmen leaders at USNA. Technical Report No. ONR-TR-7, Office of Naval Research.
- Yammarino, F.J., Spangler, W.D., & Bass, B.M. (1989). Transformational leadership and performance: A structural equation approach. Technical Report No. ONR-TR-8, Office of Naval Research.

Archival Publications

Yammarino, F.J., & Bass, B.M. (1989). Long term forecasting of transformational leadership and its effects among Naval Officers. In K.E. Clark & M.B. Clark (Eds.), Measures of leadership (pp. 151-169). West Orange, NJ: Leadership Library of America.

The other seven technical reports are (or will be) under review at the following journals:

- ONR-TR-1 Leadership Quarterly
- ONR-TR-3 Group and Organization Studies
- ONR-TR-4 Human Relations
- ONR-TR-5 Journal of Personality and Social Psychology
- ONR-TR-6 Military Psychology
- ONR-TR-7 Academy of Management Journal
- ONR-TR-8 Journal of Applied Psychology

Presentations

Dr. B.M. Bass has made formal presentations about the project to technical groups and at conferences as follows:

- American Psychological Association Conference, 1987
- International Congress of Psychology, 1988
- Conference on Psychological Measures and Leadership, 1988
- ONR and ARI Staff, 1988
- Navy Personnel Training Staff, 1988
- NPRDC Staff, 1989
- Society for Industrial and Organizational Psychology Conference, 1989

Dr. F.J. Yammarino has made formal presentations about the project to technical groups and at conferences as follows:

Center for Leadership Studies Advisory Board, 1988

Society for Industrial and Organizational Psychology Conference, 1988

Academy of Management Conference, 1988

Conference on Psychological Measures and Leadership, 1988

Center for Leadership Studies Advisory Board, 1989

NPRDC Staff, 1989

San Diego State University Distinguished Professor Lecture, 1989

USNA Staff, 1989

Society for Industrial and Organizational Psychology Conference, 1989

St. Cloud State University Guest Professor Lecture, 1989

Future Research Directions

Given the results from this research project, several directions for future research are suggested. First, the identification and empirical assessment of the personality, cognitive, and competence factors that are predictors of transformational leadership should be a focus of future investigations. Key personality factors would include values, interests, family standards, self-efficacy, self-esteem, self-confidence, sociability, emotional expressiveness, personal bravery, athletic team performance, risk-taking, mental well-being, leadership experiences, and life goals. Key cognitive factors would include cognitive differentiation and complexity, field independence, creativity, innovativeness, and thought processes. Key competence factors would include technical, communication, and managerial skills. A variety of methods (personality tests, cognitive measures, self and other leadership ratings, independently gathered performance data, interviews, biographical information) could be used on various samples of USN personnel (e.g., current fleet officers, USNA midshipmen, NROTC students) for this research.

Second, replication and extension of the current results to other groups of officers seems important. Only Midshipmen and Lieutenants Junior Grade and Lieutenants in the surface community were investigated. Higher rank officers and members of the submarine and air communities could be investigated in future work. Also, participants of the current study could be tracked in future work to determine whether the effects are maintained or diminish over a longer period of time.

Third, results of this research suggest that the development of training for officers in transformational leadership and additions of the

subject to the curriculum for midshipmen at the USNA seem warranted, accompanied by suitable research monitoring.

Fourth, additions to the selection composite and criteria for candidates' admissions to the USNA are suggested by this research. Future work on these additions could begin with current midshipmen and work back to some experimental testing with a sample of current applicants, and then ultimately to an extensive test with an entire group of applicants for a given year. If the results are favorable, a permanent addition to the USNA selection paradigm could be made and tracked further.

In sum, based on the results of this current project, the suggestions for future research have implications for the selection, training, and cost-effective use of manpower, especially officers, in the USN.

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